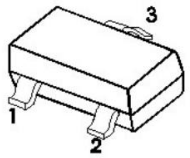
# S8050L
## NPN Transistors

### General description
SOT-23 Plastic-Encapsulate Transistors

**SOT-23**




1. BASE
2. EMITTER
3. COLLECTOR

**FEATURES**
- Complementary to S8550L
- Power Dissipation of 200mW
- High Stability and High Reliability

**MECHANICAL DATA**
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

**Marking: J6**

### Maximum Ratings & Thermal Characteristics
$T_A$ = 25°C unless otherwise noted

| Parameters | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 50 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 45 | V |
| Emitter -Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current-Continuous | $I_C$ | 100 | mA |
| Collector Power Dissipation | $P_C$ | 200 | mW |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature | Tstg | -55-+150 | ℃ |
| Thermal resistance From junction to ambient | $R_{\theta JA}$ | 625 | ℃/W |

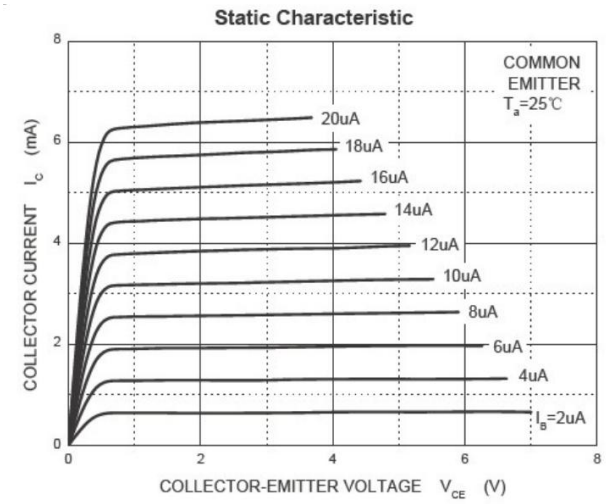
### Electrical Characteristics
$T_A$ = 25°C unless otherwise noted

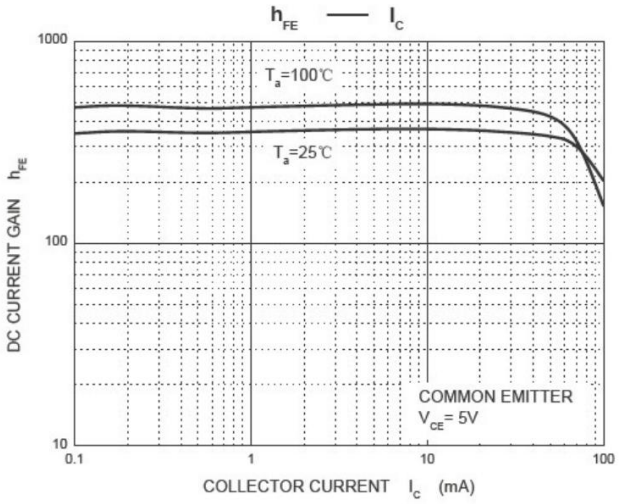
| Parameter | Symbols | Test Condition | Limits | | Unit |
|---|---|---|---|---|---|
| | | | Min | Max | |
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$=100uA, $I_E$=0 | 50 | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$=0.1mA, $I_B$=0 | 45 | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$=100uA, $I_C$=0 | 5 | | V |
| Collector cut-off current | $I_{CEO}$ | $V_{CE}$=35V, $I_B$=0 | | 100 | nA |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=50V, $I_E$=0 | | 100 | nA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=3V, $I_C$=0 | | 100 | nA |
| DC current gain | $h_{FE}$ | $V_{CE}$=5V, $I_C$=1mA | 200 | 1000 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=100mA, $I_B$=5mA | | 0.30 | V |
| Base -emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=100mA, $I_B$=5mA | | 1.00 | V |
| Transition frequency | $f_T$ | $V_{CE}$=5V, $I_C$=10mA,f=30MHz | 150 | | MHz |

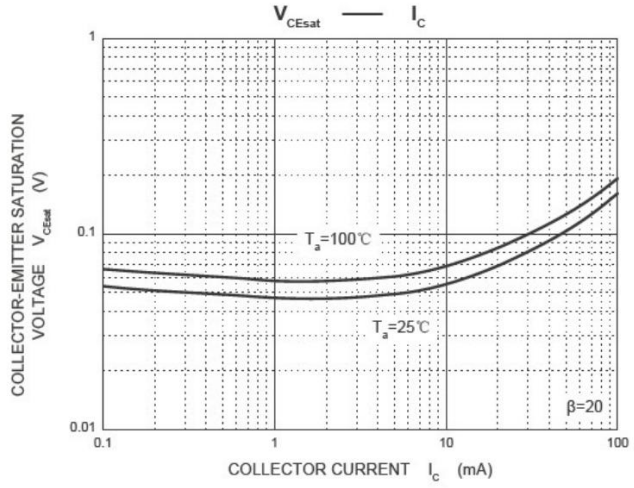
**CLASSIFICATION OF $h_{FE(1)}$**

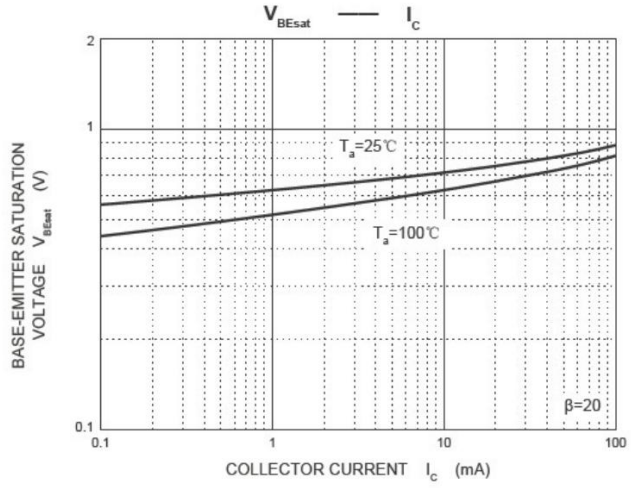
| RANK | L | H |
|---|---|---|
| RANGE | 200-450 | 450-1000 |

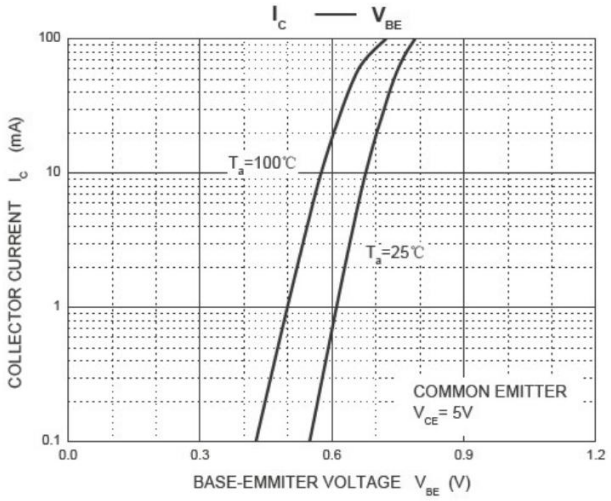
## Typical characteristics

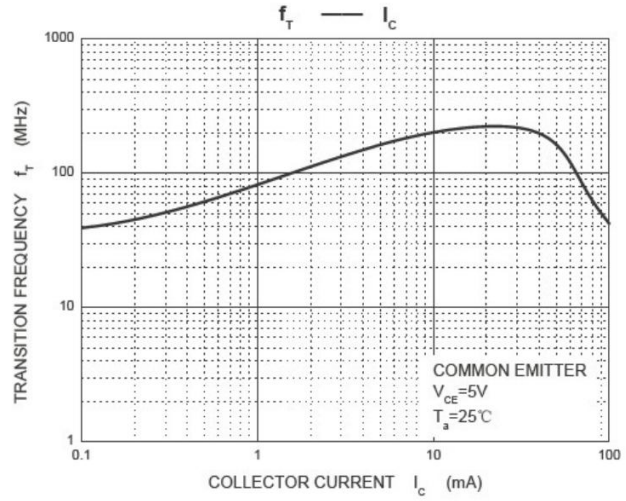


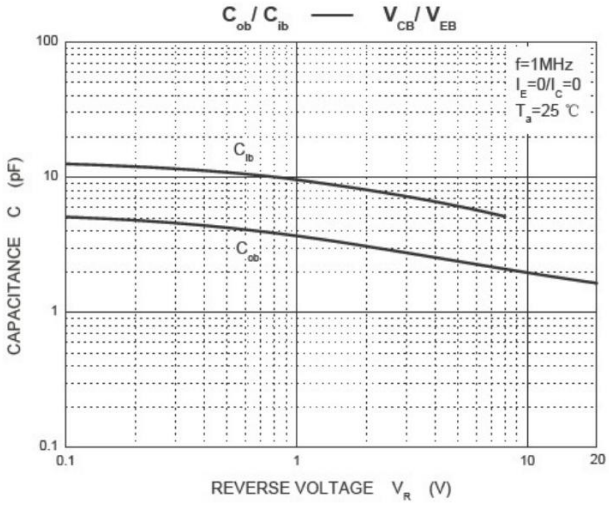



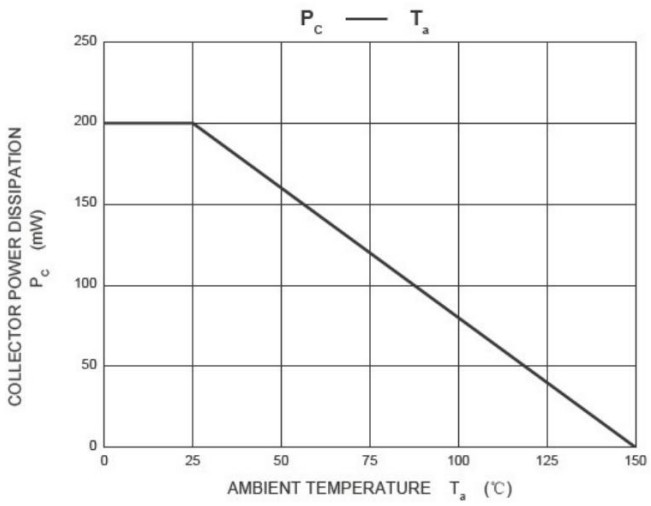



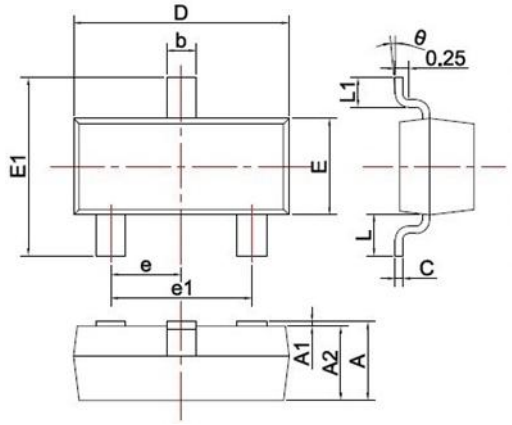





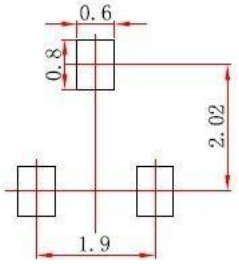

## SOT-23 PACKAGE OUTLINE Plastic surface mounted package




| SYMBOL | DIMENSIONS | |
|---|---|---|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |

Unit: mm

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs




Note:
1.Controlling dimension:In millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

# Important Notice and Disclaimer

DOESHARE has used reasonable care in preparing the information included in this document, but DOESHARE does not warrant that such information is error free. DOESHARE assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

DOESHARE no warranty, representation or guarantee regarding the documents, circuits and products specification, DOESHARE reservation rights to make changes for any documents, products, circuits and specifications at any time without notice.

Purchasers are solely responsible for the choice, selection and use of the DOESHARE products and services described herein, and DOESHARE assumes no liability whatsoever relating to the choice, selection or use of the products and services described herein.

No license, express or implied, by implication or otherwise under any intellectual property rights of DOESHARE.

Resale of DOESHARE products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by DOESHARE for the DOESHARE product or service described herein and shall not create or extend in any manner whatsoever, any liability of DOESHARE.